



**VERDEGAAL  
BROTHERS,  
INC.®**

13555 S. 11th Ave. / Hanford, CA 93230  
(559) 582-9205

## MATERIAL SAFETY DATA SHEET

# 10-0-0-49



### I PRODUCT IDENTIFICATION

MANUFACTURER'S NAME Verdegaal Bros., Inc.	TELEPHONE NO. (559) 582-9205 / 582-8990
ADDRESS 13555 S. 11th Ave., Hanford, California 93230	
CHEMICAL NAME Urea - Sulfuric Acid - Water	
SYNONYMS AND TRADE NAMES 10-0-0-49, 10-0-0-16(S), 10/49	
CHEMICAL FAMILY Molecular Addition Compound - Organic Salt Solution	
SHIPPING NAME Urea Sulfuric Acid Fertilizer	
DOT INFORMATION When shipped by highway, this material may be shipped as non-hazardous material per 49 CFR 173.154 (d)	
PRODUCT INFORMATION Fertilizer Solution, Monocarbamide Dihydrogen Sulfate, CAS # 21351-39-3	

### II WARNING STATEMENTS

**DANGER**  
MAY CAUSE SEVERE EYE BURN  
PROLONGED CONTACT MAY CAUSE SEVERE SKIN BURNS  
HARMFUL OR FATAL IF SWALLOWED  
DO NOT TASTE OR SWALLOW  
DO NOT GET IN EYES, ON SKIN OR ON CLOTHING  
DO NOT BREATHE MIST  
DO NOT HEAT ABOVE 230°F.  
USE WITH ADEQUATE VENTILATION. KEEP SYSTEM OR CONTAINER CLOSED  
WASH THOROUGHLY AFTER HANDLING  
WASH APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

### III HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	%	HAZARD DATA
Urea CAS # 57-13-6	22	Not established
Sulfuric Acid CAS #7664-93-9	49	Corrosive
Water CAS #7732-18-5	29	Not established

### IV PHYSICAL DATA

BOILING POINT, 760 MM HG	230°-300° F	MELTING POINT
SPECIFIC GRAVITY (H <sub>2</sub> O=1)	1.45 at 68°F or 12.1 lbs / gal	VAPOR PRESSURE
VAPOR DENSITY (AIR=1)	Heavier than air	SOLUBILITY IN H <sub>2</sub> O 100%
% VOLATILES BY VOL		EVAPORATION RATE Slower than ether
APPEARANCE AND ODOR	Clear odorless liquid	

pH is less than 1  
Vapor density is heavier than air  
Weight per gallon is 12.1 pounds  
Because of the sulfuric acid content, this product should be treated as an acid material.

## V FIRE AND EXPLOSION DATA

FLASH POINT (TEST METHOD)	None to boiling		AUTOIGNITION TEMPERATURE	
FLAMMABLE LIMITS IN AIR, % BY VOL.		LOWER		UPPER
EXTINGUISHING MEDIA	Material does not burn. Use that which is appropriate for surrounding fire.	DOT FLAMMABILITY CLASSIFICATION	Nonflamable liquid	
SPECIAL FIRE FIGHTING PROCEDURES	The use of a self-contained breathing apparatus (SCBA) and full protective clothing is recommended for firefighters. Water spray may be useful in minimizing vapors and cooling containers exposed to heat and flame.			
UNUSUAL FIRE AND EXPLOSION HAZARD	This material will vigorously decompose if heated above 230°-300°F. The potential for tank rupture exists if heated to decomposition. Contact of the diluted material with common metals may generate hydrogen gas which can form flammable mixtures with air.			

## VI HEALTH HAZARD INFORMATION

EYE EFFECTS	This material is a severe eye irritant. Direct contact with liquid or exposure to mists may cause burning, tearing, redness, swelling, corneal damage, and irreversible eye damage.
SKIN EFFECTS	This material is a severe skin irritant. Prolonged or repeated contact with this material may cause redness, swelling, burns and severe skin damage. Persons with pre-existing skin disorders may be more susceptible to the effects of this material.
INHALATION	Breathing mists of this material may cause severe irritation and burns of the nose, throat and respiratory tract. Respiratory symptoms associated with pre-existing lung disorders. (E.G. Asthma - like conditions) may be aggravated by exposure to this material.
INGESTION	This material is toxic and may be harmful or fatal if swallowed. Ingestion may result in severe irritation and burns of the mouth, throat and digestive tract.
COMMENTS	This substance has not been identified as a carcinogen or probable carcinogen by NTP, IARC, or OSHA.

### EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE                      Unknown

CHRONIC OVEREXPOSURE                      Unknown

## VII EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT	Immediately move victim away from exposure to mists and into fresh air. If irritation or redness develops, flush eyes with clean water and seek immediate medical attention. For direct contact, immediately flush the affected eye(s) with clean water for at least 30 minutes. Seek immediate medical attention.
SKIN CONTACT	Immediately flush affected area(s) with large amounts of water while removing contaminated clothing. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse the affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.
INHALATION	Immediately move victim away from exposure and into fresh air. If symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, artificial respiration should be administered. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
INGESTION	<b>***DO NOT INDUCE VOMITING. CORROSIVE MATERIAL. ACID BURNS***</b> If victim has any breathing difficulties, call for emergency help immediately. If victim is conscious and alert, immediately rinse mouth with water and dilute the ingested material by giving one glass of milk or water to drink. Call a physician or poison center. If possible, do not leave victim unattended.

### VIII REACTIVITY DATA

STABILITY	This product is stable under normal conditions of handling and storage. This material will vigorously decompose, releasing carbon dioxide gas if heated above 230°-300°F. Do not heat above 170°F.
CONDITIONS TO AVOID	
INCOMPATIBILITY (MATERIALS TO AVOID)	
HAZARDOUS DECOMPOSITION PRODUCTS	Combustion may yield oxides of carbon, nitrogen and sulfur. Exposure to heat may liberate carbon dioxide and ammonia.
HAZARDOUS POLYMERIZATION	Will not occur.
CONDITIONS TO AVOID	N/A

### IX SPILL OR LEAK PROCEDURES

PRECAUTIONS IN CASE OF RELEASE OR SPILL	Isolate spill area and restrict entry. Wear appropriate personal protective equipment. Keep spill out of drains, sewers and waterways. Dike spilled material and recover free standing product. Dilute any remaining pools of liquid 3 to 1 with water and then neutralize with sodium bicarbonate, calcium carbonate (limestone), dolomite sodium carbonate or soda ash.
WASTE DISPOSAL METHOD	Dispose of product in accordance with applicable local, county, state and federal regulations.

### X SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	No respiratory protection is expected to be needed in normal use. If airborne concentrations exceed, established exposure limits, use a powered air purifying respirator with Heda filter or a supplied air respirator. Do not use a chemical cartridge respirator. Depending on the nature and concentration of the airborne material, use a respirator or gas mask if determined necessary with appropriate cartridges and canisters (NIOSH approved, if available) or supplied air equipment.
VENTILATION	If current ventilation practices are not adequate to maintain airborne concentrations below established exposure limits additional ventilation or exhaust systems may be required.
PROTECTIVE GLOVES	The use of gloves impermeable to the specific material handled is advised to prevent skin contact, possible irritation and skin damage.
EYE PROTECTION	Approved eye protection such as chemical goggles or face shields to safeguard against potential eye contact irritation or injury is recommended.
OTHER PROTECTIVE EQUIPMENT	Impervious clothing should be worn as needed. Eye wash and quick drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. This product will cause deterioration of cotton, leather and nylon.

## XI SPECIAL PRECAUTIONS

### PRECAUTIONARY STATEMENTS

Personal contact with the product should be avoided. Should contact be made, remove saturated clothing and flush affected areas with water. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe mists. Wash thoroughly after handling. Wash clothing before reuse. Store closed containers in a cool, dry, well ventilated area. Protect containers against physical damage. Keep away from incompatible materials. Product degradation may occur if heated above 140°F. Never store in mild steel containers.

### OTHER HANDLING AND STORAGE REQUIREMENTS

For storage, use 316 stainless steel, polypropylene, polyethylene, or fiberglass tanks.

304 stainless steel is not recommended for handling.

This product becomes more corrosive to most metals when it is diluted.

Transfer pumps and equipment must be compatible with sulfuric acid.

Pumps should be stainless steel, polyester or PVDF. Use Viton seals. Do not use neoprene or rubber seals. Do not use fittings or pumps containing nylon, aluminum, brass, mild steel, natural rubber or butyl rubber.

## XII DOCUMENTARY INFORMATION

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Compiled by Jim Gregory

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Email: [verdegaal@agplus.net](mailto:verdegaal@agplus.net) • Web page: [www.agplus.net/verdegaal](http://www.agplus.net/verdegaal)

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